Universitat Autònoma de Barcelona

2020/2021

Business Intelligence

Code: 102194
ECTS Credits: 6

Degree	Type	Year	Semester
2501232 Business and Information Technology	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: Yes

Prerequisites

It is important to refresh concepts already treated in subjects such as Database, especially in relation to SQL queries.

Objectives and Contextualisation

Knowing how to collect the information available in a company and organize it correctly in order to analyze it and represent it in a way that is useful for making decisions.

Competences

- Appropriately drawing up technical reports according to the customer's demands.
- Demonstrating a comprehension of the business information systems, taking into account their three specific dimensions (informational, technological and organisational) and being active in the specification, design and implementation of said systems.
- Demonstrating a comprehension of the impact of the information systems on the decision making processes in different levels of organisations, searching and designing solutions to specific problems.
- Demonstrating creativity and initiative.
- Demonstrating the ability to plan in accordance to the objectives and available resources.
- Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
- Students must be capable of analysing, summarising, organising, planning and solving problems and making decisions.

Learning Outcomes

1. Appropriately drawing up technical reports according to the customer's demands.
2. Demonstrating a comprehension of the impact of the information systems on the decision making processes in different levels of organisations, searching and designing solutions to specific problems.
3. Demonstrating creativity and initiative.
4. Demonstrating the ability to plan in accordance to the objectives and available resources.

5. Implementing treatment methods in order to obtain relevant information in the strategic decision making of the organisation.
6. Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
7. Students must be capable of analysing, summarising, organising, planning and solving problems and making decisions.

Content

1. Business Intelligence, Data Wharehouse and Dimensional Model

2. Dimensional model applied to different business processes (transactions, sales, inventory, accounting, order management, electronic commerce, ...)

3. Tour of the Processes and Tasks of the ETL system (Extraction, Transformation, and Load)

4. Business Intelligence programs

5. The representation of the data (metrics, KPI, good visualization practices, ...)

6. Creation of effective dashboards

7. Integration of Databases at the Dimensional level

8. Big Data and its implications in the BI

Methodology

In this subject, the inverse class teaching methodology (flipped classroom) is applied, which implies modifying the traditional role of the student and the teacher. With this methodology, the teacher provides the student with resources (readings, videos, podcasts, ...) that allow her/him to study the basic concepts on his own, before attending the class. In class time is used to resolve doubts, discuss the concepts learned and solve exercises and practices carried out individually or in groups.

This course will be taught NOT in person (On-line). Students must be available to connect to the links provided in the Moodle classroom, in the time slot assigned for the subject, to work with their groupmates and / or to contact the teacher of the subject.

In parallel, students must develop a Business Intelligence Project that consists of developing dashboards based on the real data of a company.

With these practices and project, students will learn to:

* Collect and understand the information generated in business processes
* Structure the information to obtain a dimensional model that generates the Data Wharehouse of the company
* Analyze the Business Intelligence programs available in the market
* Use intensively one of the Business Intelligence programs. In particular, the BI Tableau software is studied in depth.

Tableau data visualization software (www.tableau.com) is provided through the Tableau for Teaching program (http://www.tableau.com/academic)

Also, we are supported by DataCamp (www.datacamp.com), the most intuitive learning platform for data science.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory classes	15	0.6	6, 3, 5
Lectures, discussion of cases and presentation of works	30	1.2	6, 4, 3, 2, 5, 1, 7
Type: Supervised			
Tutorials and follow-up of the work to be done and the cases to prepare	15	0.6	6, 4, 3, 2, 5, 1, 7
Type: Autonomous			
Related readings, preparation of cases and practices, study and elaboration of schemes	87	3.48	6, 4, 3, 2, 5, 1, 7

Assessment

The mark of this subject is the result of a continuous evaluation formed by:

1. Delivery and participation of the activities carried out in the classroom. Assistance and participation are required for 80% of the planned activities (20%). In this non-face-to-face format, attendance will be understood as being available on the proposed connections.

2. Realization of a Business Intelligence project (40%). This project is divided into 3 parts:

a) Locate an operational database of a company and development of the dimensional model.

b) Definition of the most appropriate management indicators and the most appropriate visualization.

c) Presentation of a scorecard with Tableau.

3. Individual tests carried out throughout the course and on the date set by the Faculty (40%).

To calculate the grade of the subject, in addition to the attendance and participation to 80% of the planned activities, it is essential to obtain an average score higher than 5 in the set of individual tests.

A student is considered to be "Not evaluable" in the subject when informing the teacher that he/she leaves the subject before week 7 of the course.

Calendar of evaluation activities

The dates of the evaluation activities (exercises in the classroom, assignments, ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

"The dates of evaluation activities cannot be modified unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity." ***Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB).*** Students of the Faculty of Economics and Business, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an Application for exams' reschedule
https://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule

Grade revision process

After all grading activities have ended, students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

Retake Process

"To be eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two-thirds of the total evaluation activities of the subject." Section 3 of Article 112 ter. The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3.5 and 4.9.

The date of the retake exam will be posted in the calendar of evaluation activities of the Faculty. Students who take this exam and pass will get a grade of 5 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, the student will fail the course.

Irregularities in evaluation activities

In spite of other disciplinary measures deemed appropriate, and inaccordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of an evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. ***Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).***

In this sense, any delivery that is identified plagiarized by other colleagues or any other source entails a zero in that evaluation. In case of plagiarism between classmates, the zero will be as much for the plagiarist as for the one that facilitates the plagiarism.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery and participation of the activities carried out in the classroom	20%	0	0	6, 4, 3, 2, 5, 1, 7
Individual tests and final test	40%	3	0.12	6, 4, 3, 2, 5, 1, 7
Realization of a Business Intelligence project	40%	0	0	6, 4, 3, 2, 5, 1, 7

Bibliography

Kimball, Ralph y Ross, Margy ((2013): The Data Wharehouse Toolkit: The definitive guide to Dimensional Modeling. Third edition

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Few, Stephen (2012): Show Me the Numbers: Designing Tables and Graphs to Enlighten, Second Edition, Analytics Press

Jones, Ben (2014): Communicating Data with Tableau, First Edition, O'Reilly Media
Murray, Dan (2016): Tableau Your Data!: Fast and Easy Visual Analysis with Tableau Software, 2nd Revised edition, John Wiley & Sons Inc
Milligan, Joshua N. (2016): Learning Tableau 10, 2nd Revised edition, Packt Publishing - ebooks Account
http://klenk.com.ar/Access%202013.pdf
http://www.tableausoftware.com/es-es/learn/training